What is claimed is:

1. An air filter assembly comprising:

(a) a housing including an air inlet, an air outlet, a spacer wall separating said housing into a filtering chamber and a clean air chamber; said spacer wall including a first air flow aperture therein;

(b) a first filter construction positioned in air flow communication with said first air flow aperture in said spacer wall; said first filter construction including an extension of a pleated filter media composite defining a filter construction inner clean air chamber;

(i) said first filter construction being oriented with said filter inner clean air chamber in air flow communication with said spacer wall first air flow aperture;

(ii) said pleated filter media composite including a substrate at least partially covered by a layer of fine fiber;

(A) said fiber comprising a diameter of about 0.01 to 0.5 microns that after exposure for a test period of 16 hours to test conditions of 140°F air and a relative humidity of 100% retains greater than 30% of the fiber unchanged for filtration purposes

(d) a pulse-jet cleaning system oriented to direct a pulse of air into said filter construction inner clean air chamber.

2. An air filter assembly according to claim 1 wherein the fine fiber comprises a polymer.

3. An air filter assembly according to claim 2 wherein the polymer comprises a condensation polymer

4. An air filter assembly according to claim 2 wherein the polymer comprises an addition polymer

5. An air filter assembly according to claim 4 wherein the addition polymer comprises a polyvinyl halide polymer,

6. An air filter assembly according to claim 4 wherein the addition polymer comprises a polyvinylidene halide polymer.

7. The composition of claim 6 wherein the polyvinylidene halide comprises polyvinylidene chloride.

8. The composition of claim 6 wherein the polyvinylidene halide comprises polyvinylidene fluoride.

9. The composition of claim 4 wherein the polymer comprises a polyvinylalcohol.

10. The composition of claim 9 wherein the polyvinylalcohol is crosslinked with about 1 to 40 wt.% of a crosslinking agent.

11. The composition of claim 10 wherein the crosslinked polyvinylalcohol is crosslinked using a polyacrylic acid having a molecular weight of about 1000 to 3000.

12. The composition of claim 10 wherein the crosslinked polyvinylalcohol is crosslinked using a melamine-formaldehyde resin having a molecular weight of about 1000 to 3000.

13. The polymer of claim 3 comprising a condensation polymer, other than a copolymer formed from a cyclic lactam and a C_{6-10} diamine monomer or a C_{6-10} diacid monomer, and a resinous additive comprising an oligomer having a molecular weight of about 500 to 3000 and an aromatic character wherein the additive miscible in the condensation polymer.

14. The polymer of claim 3 comprising a condensation polymer, other than a copolymer formed from a cyclic lactam and a C_{6-10} diamine monomer or a C_{6-10} diacid monomer, and a resinous additive comprising an oligomer having a molecular weight of about 500 to 3000 and an alkyl phenolic aromatic character wherein the additive miscible in the condensation polymer.

15. The polymeric composition of claim 14 wherein the polymer is a component of a solution, the solution comprising a major proportion of an aqueous alcoholic solvent and about 3 to 30 wt% of the polymeric composition.

16. The composition of claim 14 wherein the condensation polymer comprises a polyalkylene terephthalate.

17. The composition of claim 16 wherein the condensation polymer comprises a polyalkylene naphthalate.

18. The composition of claim 16 wherein the condensation polymer comprises a polyethylene terephthalate.

19. The composition of claim 14 wherein the condensation polymer comprises a nylon polymer comprising a homopolymer having repeating units derived from a cyclic lactam.

20. The composition of claim 14 wherein the nylon copolymer is combined with a second nylon polymer, the second nylon polymer differing in molecular weight or monomer composition.

21. The composition of claim 14 wherein the nylon copolymer is combined with a second nylon polymer, the second nylon polymer comprising an alkoxy alkyl modified polyamide.

22. The composition of claim 20 wherein the second nylon polymer comprises a nylon copolymer.

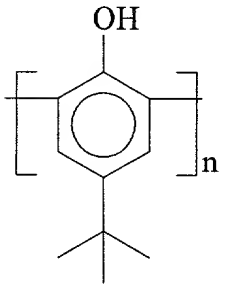
23. The composition of claim 20 wherein the polymers are treated to form a single polymeric composition as measured by a differential scanning calorimeter showing a single phase material.

24. The composition of claim 23 wherein the copolymer and the second polymer are heat treated.

25. The composition of claim 24 wherein the copolymer and the second polymer are heat treated to a temperature less than the lower melting point of the polymers.

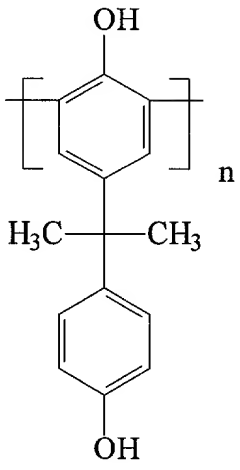
26. The composition of claim 14 wherein the additive comprises an oligomer comprising tertiary butyl phenol.

27. The composition of claim 26 wherein the additive comprises an oligomer comprising:



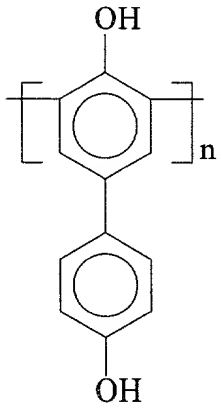
28. The composition of claim 14 wherein the resin comprises an oligomer comprising bis-phenol A.

29. The composition of claim 28 wherein the additive comprises an oligomer comprising:



30. The composition of claim 14 wherein the resin comprises an oligomer comprising dihydroxy biphenyl.

31. The composition of claim 30 wherein the additive comprises an oligomer comprising:



32. The composition of claim 14 wherein the additive comprises a blend of the resinous additive and a fluoropolymer.

33. The composition of claim 14 wherein the additive comprises a fluorocarbon surfactant.

34. The composition of claim 14 wherein the additive comprises a nonionic surfactant.

35. The composition of claim 14 wherein the condensation polymer comprises a polyurethane polymer.

36. The composition of claim 10 wherein the condensation polymer comprises a blend of a polyurethane polymer and a polyamide polymer.

37. The composition of claim 36 wherein the polyamide polymer comprises a nylon.

38. The composition of claim 37 wherein the nylon comprises a nylon homopolymer, a nylon copolymer or mixtures thereof.

39. The composition of claim 14 wherein the condensation polymer comprises an aromatic polyamide.

40. The composition of claim 14 wherein the condensation polymer comprises a reaction product of a diamine monomer and poly(m-phenylene isophthalamide).

41. The composition of claim 36 wherein the polyamide comprises a reaction product of a diamine and a poly(p-phenylene terephthalamide).

42. The composition of claim 14 wherein the condensation polymer comprises a polybenzimidazole.

43. The composition of claim 14 wherein the condensation polymer comprises a polyarylate.

44. The composition of claim 43 wherein the polyarylate polymer comprises a condensation polymerization reaction product between bis-phenol-A and mixed phthalic acids.

45. An air filter assembly according to claim 1 further including:

(a) a first Venturi element mounted in said spacer wall first air flow aperture and positioned to project into said first filter construction inner clean air chamber; and wherein

(i) said pulse-jet cleaning system includes a first blowpipe oriented to direct a pulse of air into said first Venturi element from said clean air chamber and toward said first filter construction.

46. An air filter assembly according to claim 1 wherein:

(a) said first filter construction includes a first end cap having a central aperture; said extension of filter media being embedded within said first end cap.

47. An air filter assembly according to claim 1 wherein:

(a) said first filter construction includes first and second filter elements in axial alignment;

(i) said extension of a pleated filter media composite comprising a first extension of media in said first filter element and a second extension of media in said second filter element.

48. An air filter assembly according to claim 1 wherein:

(a) said spacer wall includes a second air flow aperture therein; and wherein the assembly further includes:

(i) a second filter construction positioned in air flow communication with said second air flow aperture in said spacer wall; said

second filter construction including an extension of a pleated filter media composite defining a second filter construction inner clean air chamber;

(A) said second filter construction being oriented with said second filter inner clean air chamber in air flow communication with said spacer wall second air flow aperture; and

(B) said pleated filter media composite of said second filter construction including a substrate at least partially covered by a layer of fine fiber.

49. An air filter assembly according to claim 1 wherein:

(a) said spacer wall includes a second air flow aperture therein; and wherein the assembly further includes:

(i) a second filter construction positioned in air flow communication with said second air flow aperture in said spacer wall; said second filter construction including an extension of a pleated filter media composite defining a second filter construction inner clean air chamber;

(A) said second filter construction being oriented with said second filter inner clean air chamber in air flow communication with said spacer wall second air flow aperture; and

(B) said pleated filter media composite of said second filter construction including a substrate at least partially covered by a layer of fine fiber;

(ii) a second Venturi element mounted in said spacer wall second air flow aperture and positioned to project into said second filter construction inner clean air chamber;

(iii) a second blowpipe oriented to direct a pulse of air into said second Venturi element from said clean air chamber and toward said second filter construction.

50. A method for filtering air; the air having a temperature of at least 140°F; the method comprising:

(a) directing the air through an inlet of a housing and into a filtering chamber; the housing including a spacer wall separating the the filtering chamber from a clean air chamber; the spacer wall including a first air flow aperture therein;

(b) after directing the air into the filtering chamber, directing the air through an extension of a pleated filter media composite of a first filter construction and into a filter construction inner clean air chamber; the first filter construction being positioned in air flow communication with the first air flow aperture in the spacer wall; the extension of a pleated filter media composite defining the filter construction inner clean air chamber;

(i) the first filter construction being oriented with the filter inner clean air chamber in air flow communication with the spacer wall first air flow aperture;

(ii) the media composite including a substrate at least partially covered by a layer said layer comprising fine fiber comprising a fiber with a diameter of about 0.1 to 0.5 microns that after exposure for a test period of 16 hours to test conditions of 140°F air and a relative humidity of 100% retains greater than 30% of the fiber unchanged for filtration purposes; and

(c) after directing the air through an extension of a pleated filter media composite of a first filter construction and into a filter construction inner clean air chamber, directing the air into the clean air chamber and out of the housing.

51. A method according to claim 50 further including directing a pulse of air into the filter construction inner clean air chamber to at least partially remove particulates collected on the pleated filter media composite.

52. A method according to claim 51 wherein said step of directing a pulse of air into the filter construction inner clean air chamber to at least partially remove particulates collected on the pleated filter media composite includes directing the pulse of air into a Venturi element mounted to project into the first filter construction inner clean air chamber.

53. A method according to claim 50 wherein said housing spacer wall includes a plurality of extensions of pleated filter media composites of a plurality of filter constructions wherein each of the extensions of a pleated filter media composites define a respective filter construction inner clean air chamber.

54. A method according to claim 50 further including directing a pulse of air into each of the filter construction inner clean air chambers to at least partially remove particulates collected on each of the pleated filter media composites.

55. A method according to claim 51 wherein said step of directing a pulse of air into each of the filter construction inner clean air chambers to at least partially remove particulates collected on each of the pleated filter media composite includes directing the pulse of air into a plurality of Venturi elements each mounted to project into a respective filter construction inner clean air chamber.

56. A method according to claim 50 further including vibrating the media to at least partially remove particulates collected on the pleated filter media composite.